

ATTACHMENT A

Application No.: 10/769,146
Attorney Docket No.: 351991-991320
Response to Office Action of Sept. 29, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Original): A semiconductor integrated circuit comprising:

an internal circuit having first and second external terminals;
first and second fuse elements, each having first and second terminals, the first terminals of the first and second fuse elements being respectively connected to the first and second external terminals; and
a discharge line connected to the second terminals of the first and second fuse elements and serving as an electrostatic discharge current path.

Claim 2 (Original): The semiconductor integrated circuit according to Claim 1, wherein:

the internal circuit further has a MOS transistor having a gate connected to the first external terminal; and
each of the first and second fuse elements has a resistance value that satisfies:

$$V_{ox} > (R_m + R_x) \times I_{esd}$$

where V_{ox} represents a breakdown voltage of a gate oxide film of the MOS transistor, R_m represents a wire resistance value in the electrostatic discharge current path between the first and second external terminals, R_x represents a resistance value of all fuse elements arranged in the electrostatic discharge current path between the first and second external terminals, and I_{esd} represents a value of an electrostatic discharge current.

ATTACHMENT A

Application No.: 10/769,146
Attorney Docket No.: 351991-991320
Response to Office Action of Sept. 29, 2005

Claim 3 (Original): The semiconductor integrated circuit according to Claim 1, wherein the fuse elements remain firm even when energy of 200 μ J is applied thereto.

Claim 4 (Original): The semiconductor integrated circuit according to Claim 1, wherein the fuse elements remain firm even when energy of 200 μ J is applied thereto but break when a direct current of 30mA is applied thereto within 20 seconds.

Claim 5 (Original): The semiconductor integrated circuit according to Claim 1, wherein the fuse elements are electrically disconnected when the semiconductor integrated circuit is mounted on a circuit board.

Claim 6 (Withdrawn): A semiconductor integrated circuit comprising:
an internal circuit having first and second external terminals;
an electrostatic protecting circuit connected to the second external terminal;
a fuse element having first and second terminals, the first terminal of the fuse element being connected to the first external terminal; and
a discharge line connected to the electrostatic protecting circuit and the second terminal of the fuse element and serving as an electrostatic discharge current path.

Claim 7 (Withdrawn): The semiconductor integrated circuit according to Claim 6, wherein:

the internal circuit further has a MOS transistor having a gate connected to the first external terminal; and

ATTACHMENT A

Application No.: 10/769,146
 Attorney Docket No.: 351991-991320
 Response to Office Action of Sept. 29, 2005

the fuse element has a resistance value that satisfies:

$$V_{ox} > (R_m + R_x) \times I_{esd}$$

where V_{ox} represents a breakdown voltage of a gate oxide film of the MOS transistor, R_m represents a wire resistance value in the electrostatic discharge current path between the first and second external terminals, R_x represents a resistance value of the fuse element, and I_{esd} represents a value of an electrostatic discharge current.

Claim 8 (Withdrawn): The semiconductor integrated circuit according to Claim 6, wherein the fuse element remains firm even when energy of $200\mu J$ is applied thereto.

Claim 9 (Withdrawn): The semiconductor integrated circuit according to Claim 6, wherein the fuse element remains firm even when energy of $200\mu J$ is applied thereto but breaks when a direct current of $30mA$ is applied thereto within 20 seconds.

Claim 10 (Withdrawn): The semiconductor integrated circuit according to Claim 6, wherein the fuse element is electrically disconnected when the semiconductor integrated circuit is mounted on a circuit board.

Claim 11 (Withdrawn): A semiconductor integrated circuit comprising:
 an internal circuit having first, second and third external terminals;
 a fuse element having first and second terminals, the first terminal of the fuse element being connected to the first external terminal;

ATTACHMENT A

Application No.: 10/769,146
Attorney Docket No.: 351991-991320
Response to Office Action of Sept. 29, 2005

first and second electrostatic protecting circuits respectively connected to the second and third external terminals;

a first discharge line connected to the first and second electrostatic protecting circuits and serving as an electrostatic discharge current path; and

a second discharge line connected to the second terminal of the fuse element and the second external terminal and provided to keep the first and second external terminals at substantially the same potential.

Claim 12 (Withdrawn): The semiconductor integrated circuit according to Claim 11, wherein:

the internal circuit further has a MOS transistor having a gate connected to the first external terminal; and

the fuse element has a resistance value that satisfies:

$$V_{ox} > (R_m + R_x) \times I_{csd}$$

where V_{ox} represents a breakdown voltage of a gate oxide film of the MOS transistor, R_m represents a wire resistance value in the electrostatic discharge current path between the first and second external terminals or between the first and third external terminals, R_x represents a resistance value of the fuse element, and I_{csd} represents a value of an electrostatic discharge current.

Claim 13 (Withdrawn): The semiconductor integrated circuit according to Claim 11, wherein the fuse element remains firm even when energy of $200\mu J$ is applied thereto.

ATTACHMENT A

Application No.: 10/769,146
Attorney Docket No.: 351991-991320
Response to Office Action of Sept. 29, 2005

Claim 14 (Withdrawn): The semiconductor integrated circuit according to Claim 11, wherein the fuse element remains firm even when energy of $200\mu\text{J}$ is applied thereto but breaks when a direct current of 30mA is applied thereto within 20 seconds.

Claim 15 (Withdrawn): The semiconductor integrated circuit according to Claim 11, wherein the fuse element is electrically disconnected when the semiconductor integrated circuit is mounted on a circuit board.

Claim 16 (Withdrawn): A semiconductor integrated circuit comprising:
a digital circuit having a first external terminal;
a first electrostatic protecting circuit connected to the first external terminal;
a first discharge line connected to the first electrostatic protecting circuit and serving as an electrostatic discharge current path;
an analog circuit having a second external terminal;
a second electrostatic protecting circuit connected to the second external circuit;
a second discharge line connected to the second electrostatic protecting circuit and serving as an electrostatic discharge current path; and
a fuse element connected between the first and second discharge lines and serving as an electrostatic current path of the digital and analog circuits.

Claim 17 (Withdrawn): The semiconductor integrated circuit according to Claim 16, wherein:

ATTACHMENT A

Application No.: 10/769,146
Attorney Docket No.: 351991-991320
Response to Office Action of Sept. 29, 2005

the digital circuit further has a MOS transistor having a gate connected to the first external terminal; and

the fuse element has a resistance value that satisfies:

$$V_{ox} > (R_m + R_x) \times I_{esd}$$

where V_{ox} represents a breakdown voltage of a gate oxide film of the MOS transistor, R_m represents a wire resistance value in the electrostatic discharge current path between the first and second external terminals, R_x represents a resistance value of the fuse element, and I_{esd} represents a value of an electrostatic discharge current.

Claim 18 (Withdrawn): The semiconductor integrated circuit according to Claim 16, wherein the fuse element remains firm even when energy of $200\mu J$ is applied thereto.

Claim 19 (Withdrawn): The semiconductor integrated circuit according to Claim 16, wherein the fuse element remains firm even when energy of $200\mu J$ is applied thereto but breaks when a direct current of 30mA is applied thereto within 20 seconds.

Claim 20 (Withdrawn): The semiconductor integrated circuit according to Claim 16, wherein the fuse element is electrically disconnected when the semiconductor integrated circuit is mounted on a circuit board.